University of Pretoria Yearbook 2016

Process metallurgy and control 412 (NPB 412)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	8.00
Programmes	BEng Metallurgical Engineering
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Prerequisites	(NPM 321)
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	English
Academic organisation	Materials Science and Metallur
Period of presentation	Semester 1

Module content

Elements of metallurgical process control (principles, selection of proportional-integral controller, identification of controlled and manipulated variables and disturbances). Transient and steady-state heat transfer in metallurgy (formation of freeze layers, heating and cooling of components). Principles of reaction kinetics in pyrometallurgy (types and identification of rate-determining steps, quantification of overall reaction rate).